

EPA/OPP MICROBIOLOGY LABORATORY
ESC, Ft. Meade, MD

Standard Operating Procedure
for
Monitoring Temperature of Incubators, Refrigerators, and Freezers

SOP Number: QC-05-02

Date Revised: 08-29-02

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1.0 SCOPE AND APPLICATION:

1.1 This protocol describes the quality control requirements for recording the temperature of laboratory incubators, refrigerators and freezers.

2.0 DEFINITIONS:

2.1 ASTM = American Society for Testing and Materials

2.2 NIST = National Institute of Standards and Technology

3.0 HEALTH AND SAFETY: Not applicable

4.0 CAUTIONS: None

5.0 INTERFERENCES: None

6.0 PERSONNEL QUALIFICATIONS:

6.1 Personnel are required to be knowledgeable about the procedures in this SOP.

7.0 SPECIAL APPARATUS AND MATERIALS:

7.1 Incubator No. 1-4, 6 and 10-16 are large capacity Precision Incubators, Model No. 30M, for culture of bacteria.

7.1.1 Incubator No. 1. Serial No. 699010761. Location: Room B204.

7.1.2 Incubator No. 2. Serial No. 699010763. Location: Room B204.

7.1.3 Incubator No. 3. Serial No. 698110167. Location: Room B204.

7.1.4 Incubator No. 4. Serial No. 698110166. Location: Room B204.

7.1.5 Incubator No. 6. Serial No. 699021013. Location: Room B207.

7.1.6 Incubator No. 8. Serial No. 06046. Boekel Industries bench top incubator Model 132000. Location: Room B203.

7.1.7 Incubator No. 9. Serial No. 0799-0160. LAB-LINE Bench top Incubator, Imperial III. Location: Room B207.

7.1.8 Incubator No. 10. Serial No. 6000529. Location: Room B203.

7.1.9 Incubator No. 11. Serial No. 6000528. Location: Room B203.

7.1.10 Incubator No. 12. Serial No. 6000527. Location: Room B203.

7.1.11 Incubator No. 13. Serial No. 699021012. Location: Room B203.

7.1.12 Incubator No. 14. Serial No. 600041067. Location: Room B202.

7.1.13 Incubator No. 15. Serial No. 600041066. Location: Room B202.

7.1.14 Incubator No. 16. Serial No. 600041068. Location: Room B202.

7.2 Refrigerators/Freezers:

7.2.1 Refrigerator No. 1R Summit - Model No. BI-605J. Serial No.970900695. Location: Room B207.

7.2.2 Refrigerator/Freezer No. 2R/2F White Westinghouse Refrigerator/Freezer - Model No. WRT17CGAWO. Serial No. BA32603844. Location: Room B206.

7.2.3 Refrigerator/Freezer No. 3R/3F White-Westinghouse Refrigerator/Freezer. Model No. WRT17CGAWO. Serial No. BA32403117. Location: Room B205.

7.2.4 Refrigerator/Freezer No. 4R/4F VWR Model No. 55700-002. Serial No. 698 - 002. Location: Room B203.

7.2.5 Refrigerator No. 5R Summit - Model No. BI-605J. Serial No. 970900679. Location: Room B205.

7.2.6 Refrigerator No. 6R Summit - Model No. BI-605J. Serial No. 970900665. Location: Room B207.

7.2.7 Refrigerator No. 7R Revco Technologies - Model No. RFS214A14.
Serial No. P09K-476736-PK. Location: Room B204.

7.2.8 Refrigerator No. 8R Revco Technologies - Model No. RFS214A14.
Serial No. R02L-52413-RL. Location: Room B202.

7.2.9 Freezer No. 9F Revco Technologies - Model No. ULT390-5-A30.
Serial No. U08J-443679-UJ. Location: Room B201.

7.3 Thermometers directly traceable to or certified by the NIST or ASTM are used to monitor temperatures of individual incubators, refrigerators and freezers.

8.0 INSTRUMENT OR METHOD CALIBRATION:

8.1 Thermometers are calibrated according to SOP EQ-02, Thermometers.

9.0 SAMPLE HANDLING AND STORAGE: Not applicable

10.0 PROCEDURE AND ANALYSIS:

10.1 The temperature of each instrument adjusted for the correction factor for that thermometer will be recorded once daily each working day (Monday through Friday excluding holidays and days when the ESC is closed for any reason) on the appropriate Temperature Record form (see 16.0).

11.0 DATA ANALYSIS/CALCULATIONS: None

12.0 DATA MANAGEMENT/RECORDS MANAGEMENT:

12.1 The temperature of each incubator, refrigerator and freezer is to be recorded promptly, legibly and in indelible ink on the appropriate incubator, refrigerator or freezer temperature record form. Monthly completed forms are archived in notebooks kept in locked file cabinets in the file room D217. Archived data is subject to OPP's official retention schedule contained in SOP ADM-03, Records and Archives.

13.0 QUALITY CONTROL:

- 13.1 The OPP Microbiology Laboratory conforms to 40 CFR Part 160, Good Laboratory Practices. Appropriate quality control measures are integrated into each SOP.
- 13.2 For quality control purposes, the required information is documented on the appropriate forms.
- 13.3 The thermometers are point checked annually against a NIST traceable thermometer. A piece of label tape, displaying the correction factor, is placed around the top of the corresponding thermometer. This procedure is described in SOP EQ-02, Thermometers. The point check calibration records of thermometers are maintained in a notebook, which is archived in the laboratory's file room D217.

14.0 NONCONFORMANCE AND CORRECTIVE ACTION:

- 14.1 Any deviation from the standard procedures will be documented in the record book and investigated. The reasons for any difficulties achieving and maintaining the target temperature will be determined and the appropriate corrective action will be taken by the laboratory staff. If the problem cannot be determined or corrected, a service technician will be called in to evaluate the situation and to initiate the service on the equipment.

15.0 REFERENCES: None

16.0 FORMS AND DATA SHEETS:

- 16.1 Incubator Temperature Record
- 16.2 Refrigerator Temperature Record
- 16.3 Freezer Temperature Record

Incubator Temperature Record

OPP Microbiology Laboratory

Month/Year: ____/____		Laboratory #/Incubator ID: ____/____		
Incubator Target Temp: ____±1°C		Thermometer ID/Correction Factor: ____/____°C		
Day	Time/ Init.	Temp.*	Adjustments Necessary	Maintenance and Notes
1				
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4				
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31				

* Corrected temperature recorded

Refrigerator Temperature Record

OPP Microbiology Laboratory

Month/Year: ____/____		Laboratory #/Refrigerator ID: ____/____		
Refrigerator Target Temp: ____ °C		Thermometer ID/Correction Factor: ____/____ °C		
Day	Time/ Init.	Temp.*	Adjustments Necessary	Maintenance and Notes
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* Corrected temperature recorded

Freezer Temperature Record

OPP Microbiology Laboratory

Month/Year: ____/____		Laboratory #/Freezer ID: ____/____		
Freezer Target Temp: ____°C		Thermometer ID/Correction Factor: ____/____°C		
Day	Time/ Init.	Temp.*	Adjustments Necessary	Maintenance and Notes
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* Corrected temperature recorded